Notice of Allowability	Application No. 09/394,647	Applicant(s) GAUTIER ET AL.	
	Examiner Arlen Soderquist	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the papers filed April 16, 2004 and April 19, 2004*.

2. ☒ The allowed claim(s) is/are *1 and 4-21*.

3. ☐ The drawings filed on _____ are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas F. Roland on April 28, 2004.

The application has been amended as follows: claim 18 has been replaced by the following amended claim 18.

18. A process for determining a residual chlorine dioxide content in industrial water or drinking water after treatment or in distribution circuits, comprising the steps of:

placing the water to be analyzed in contact with the aqueous solution of claim 10 or 11 ~~or 22~~, wherein a volume ratio:

the water to be analyzed / the aqueous solution is between about 10 and about 30; and

measuring an absorbance of the resultant solution using a UV-visible spectrophotometer at a specific wavelength of the azo dye chosen.

2. The following is an examiner's statement of reasons for allowance: the art of record fails to teach or fairly suggest the aqueous solution of claim 1 containing one of the two azo dyes in the specified concentration range, a borate buffer and one or more chlorine masking agents. While borate containing ammonia buffers are known, as evidenced by the newly cited references, there in not sufficient motivation to replace the Hofmann buffer with these buffers. Additionally while the previously applied combination of references does teach or suggest for one of ordinary skill in the art to raise the pH of the buffer to avoid conversion of chlorite into chlorine dioxide, examiner realized that it fails to provide motivation for adding borate to the buffer for that purpose. This realization came about in part due to the discovery that aqueous ammonia solutions can have a pH that is in excess of 9 (see the attached table of approximate Ph values from the CRC handbook). And because the ammonia buffer of Hofmann would function as a chlorine masking agent, even though Hofmann does not teach it used for that purpose. For

these reasons there is no need or reason put forth by the references or generally known by one of ordinary skill in the art to include borate in the composition of Hofmann.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose current telephone number is (571) 272-1265 as a result of the examiner moving to the new USPTO location. The examiner's schedule is variable between the hours of about 5:30 AM to about 5:00 PM on Monday through Thursday and alternate Fridays.

A general phone number for the organization to which this application is assigned is (571) 272-1700. The fax phone number to file official papers for this application or proceeding is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arlen Soderquist

April 28, 2004

ARLEN SODERQUIST
PRIMARY EXAMINER

BUFFER SOLUTIONS (Continued)

STANDARD VALUES OF pH AT TEMPERATURE 0–95°C

Temperature	Tetroxalate 0.05 molal	Tartrate 0.0341 molal (sat'd at 25°C)	Phthalate 0.05 molal	Phosphate[a]	Phosphate[b]	Borax 0.01 molal	Calcium hydroxide (sat'd at 25°C)
0	1.666	.....	4.003	6.984	7.534	9.464	13.423
5	1.668	.....	3.999	6.951	7.500	9.395	13.207
10	1.670	.....	3.998	6.923	7.472	9.332	13.003
15	1.672	.....	3.999	6.900	7.448	9.276	12.810
20	1.675	.....	4.002	6.881	7.429	9.225	12.627
25	1.679	3.557	4.008	6.865	7.413	9.180	12.454
30	1.683	3.552	4.015	6.853	7.400	9.139	12.289
35	1.688	3.549	4.024	6.844	7.389	9.102	12.133
38	1.691	3.548	4.030	6.840	7.384	9.081	12.043
40	1.694	3.547	4.035	6.838	7.380	9.068	11.984
45	1.700	3.547	4.047	6.834	7.373	9.038	11.841
50	1.707	3.549	4.060	6.833	7.367	9.011	11.705
55	1.715	3.554	4.075	6.834	.....	8.985	11.574
60	1.723	3.560	4.091	6.836	.....	8.962	11.449
70	1.743	3.580	4.126	6.845	.....	8.921	.....
80	1.766	3.609	4.164	6.859	.....	8.885	.....
90	1.792	3.650	4.205	6.877	.....	8.850	.....
95	1.806	3.674	4.227	6.886	.....	8.833	.....

[a] Solution 0.025 m KH_2PO_4 and 0.025 m Na_2HPO_4.

[b] Solution 0.008695 m KH_2PO_4 and 0.03043 m Na_2HPO_4.

APPROXIMATE pH VALUES

The following tables give approximate pH values for a number of substances such as acids, bases, foods, biological fluids, etc. All values are rounded off to the nearest tenth and are based on measurements made at 25° C. A few buffer systems with their pH values are also given.

From Modern pH and Chlorine Control, W. A. Taylor & Co., by permission

ACIDS

Hydrochloric, N	0.1	Oxalic, 0.1N	1.6	Acetic, 0.01N	3.4
Hydrochloric, 0.1N	1.1	Tartaric, 0.1N	2.2	Benzoic, 0.01N	3.1
Hydrochloric, 0.01N	2.0	Malic, 0.1N	2.2	Alum, 0.1N	3.2
Sulfuric, N	0.3	Citric, 0.1N	2.2	Carbonic (saturated)	3.8
Sulfuric, 0.1N	1.2	Formic, 0.1N	2.3	Hydrogen sulfide, 0.1N	4.1
Sulfuric, 0.01N	2.1	Lactic, 0.1N	2.4	Arsenious (saturated)	5.0
Orthophosphoric, 0.1N	1.5	Acetic, N	2.4	Hydrocyanic, 0.1N	5.1
Sulfurous, 0.1N	1.5	Acetic, 0.1N	2.9	Boric, 0.1N	5.2

BASES

Sodium hydroxide, N	14.0	Lime (saturated)	12.4	Magnesia (saturated)	10.5
Sodium hydroxide, 0.1N	13.0	Trisodium phosphate, 0.1N	12.0	Sodium sesquicarbonate, 0.1M	10.1
Sodium hydroxide, 0.01N	12.0	Sodium carbonate, 0.1N	11.6	Ferrous hydroxide (saturated)	9.5
Potassium hydroxide, N	14.0	Ammonia, N	11.6	Calcium carbonate (saturated)	9.4
Potassium hydroxide, 0.1N	13.0	Ammonia, 0.1N	11.1	Borax, 0.1N	9.2
Potassium hydroxide, 0.01N	12.0	Ammonia, 0.01N	10.6	Sodium bicarbonate, 0.1N	8.4
Sodium metasilicate, 0.1N	12.6	Potassium cyanide, 0.1N	11.0		

BIOLOGIC MATERIALS

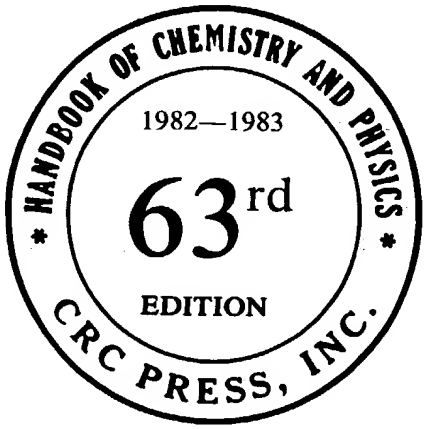
Blood, plasma, human	7.3–7.5	Gastric contents, human	1.0–3.0	Milk, human	6.6–7.6
Spinal fluid, human	7.3–7.5	Duodenal contents, human	4.8–8.2	Bile, human	6.8–7.0
Blood, whole, dog	6.9–7.2	Feces, human	4.6–8.4		
Saliva, human	6.5–7.5	Urine, human	4.8–8.4		

FOODS

Apples	2.9–3.3	Gooseberries	2.8–3.0	Potatoes	5.6–6.0
Apricots	3.6–4.0	Grapefruit	3.0–3.3	Pumpkin	4.8–5.2
Asparagus	5.4–5.8	Grapes	3.5–4.5	Raspberries	3.2–3.6
Bananas	4.5–4.7	Hominy (lye)	6.8–8.0	Rhubarb	3.1–3.2
Beans	5.0–6.0	Jams, fruit	3.5–4.0	Salmon	6.1–6.3
Beers	4.0–5.0	Jellies, fruit	2.8–3.4	Sauerkraut	3.4–3.6
Beets	4.9–5.5	Lemons	2.2–2.4	Shrimp	6.8–7.0
Blackberries	3.2–3.6	Limes	1.8–2.0	Soft drinks	2.0–4.0
Bread, white	5.0–6.0	Maple syrup	6.5–7.0	Spinach	5.1–5.7
Butter	6.1–6.4	Milk, cows	6.3–6.6	Squash	5.0–5.4
Cabbage	5.2–5.4	Olives	3.6–3.8	Strawberries	3.0–3.5
Carrots	4.9–5.3	Oranges	3.0–4.0	Sweet potatoes	5.3–5.6
Cheese	4.8–6.4	Oysters	6.1–6.6	Tomatoes	4.0–4.4
Cherries	3.2–4.0	Peaches	3.4–3.6	Tuna	5.9–6.1
Cider	2.9–3.3	Pears	3.6–4.0	Turnips	5.2–5.6
Corn	6.0–6.5	Peas	5.8–6.4	Vinegar	2.4–3.4
Crackers	6.5–8.5	Pickles, dill	3.2–3.6	Water, drinking	6.5–8.0
Dates	6.2–6.4	Pickles, sour	3.0–3.4	Wines	2.8–3.8
Eggs, fresh white	7.6–8.0	Pimento	4.6–5.2		
Flour, wheat	5.5–6.5	Plums	2.8–3.0		

CRC Handbook of Chemistry and Physics

A Ready-Reference Book of Chemical and Physical Data



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